Contents

Regulation/Institutional Considerations

Institutional arrangements within which water management takes place have grown out of the needs, values, beliefs and attitudes of people who created them.

7.1 Introduction

This section discusses enforcement of several regulations to protect and manage water resources in the Utah Lake Basin. It also discusses some environmental concerns.

Local, state and federal governments have formalized the institutional arrangements we now have by passing laws. Laws create government agencies empowered with the authority and responsibility to carry out specific missions. The mission of Utah's water agencies is to provide orderly water rights administration, adequate good quality water supplies, and a quality environment to meet the needs of its people.

In the Department of Natural Resources, the Division of Water Rights is responsible for water allocation, distribution, dam safety and stream alteration. The Division of Water Resources regulates the cloud seeding program, is responsible for state water planning and manages three water development funding programs.

Two divisions within the Department of Environmental Quality bear the major responsibility for water quality. They are the Division of Drinking Water and the Division of Water Quality. The *State Water Plan* explains these state agencies' regulatory functions in sections 7, 9, 11, and 12.

Federal agencies are also part of the regulatory picture (see Section 16). The U.S. Fish and Wildlife Service has a prominent role in protecting the endangered June sucker inhabiting Utah Lake. The Environmental Protection Agency and the Army Corps of Engineers also have significant roles in protecting water quality and wetlands.

7.2 Setting

The doctrine of prior appropriation is the basis of Utah water law administered by the State Engineer. The regional engineer for the Utah Lake Basin is in the State Engineer's office (Division of Water Rights) in Salt Lake City.

Utah County is the most populous county in the Utah Lake Basin, and is part of the Wasatch Front metropolitan area. Significant growth in this urbanized area means water use is shifting from agricultural to municipal uses. The most common example of this shift occurs when a city purchases shares in an irrigation company. Occasionally, a city buys all the irrigation stock and takes over operation of the company's delivery system.

The State Engineer is currently addressing issues that significantly affect water distribution on the Utah Lake System. On November 1, 1992, planning began to address the issue of water rights and storage in Utah Lake and their relationship to storage in upstream reservoirs. This plan sets forth the conditions and timing under which upstream reservoirs may store water while protecting senior water rights in Utah Lake. The Division of Water Rights participated in negotiations which led to an agreement for the joint operation of Deer Creek and Jordanelle reservoirs on November 1, 1994.

The State Engineer has set up groundwater management plans for Utah and Goshen valleys, Heber Valley and the northern part of Juab Valley. These plans set conditions under which groundwater can be developed while protecting existing water rights in the area. In combination, the operating agreement and management plans will serve to bring much of the basin's water distribution under a more unified system.

7.2.1 Current Regulation

Water Rights - The earliest established water right has priority over later rights. Beneficial use is the basis, measure and limit of the right. Often, irrigation water users will mutually agree to modify the "first-in-time, first-in-right principle." Water rights within a range of priority dates may be classified as primary

rights, class A rights, or another designation. They share any shortages equally among them. This basin has been closed to further appropriation of water rights.

Water Quality - The Utah Department of Environmental Quality, Division of Water Quality, is responsible for water quality regulation. Quality of a specific body of water is determined using a set of standards for allowable contaminant levels. The state's antidegradation policy says in part: "Waters whose existing quality is better than the established standards for the designated uses will be maintained at high quality unless it is decided by the board, after appropriate intergovernmental coordination and public participation, in concert with the Utah continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located."

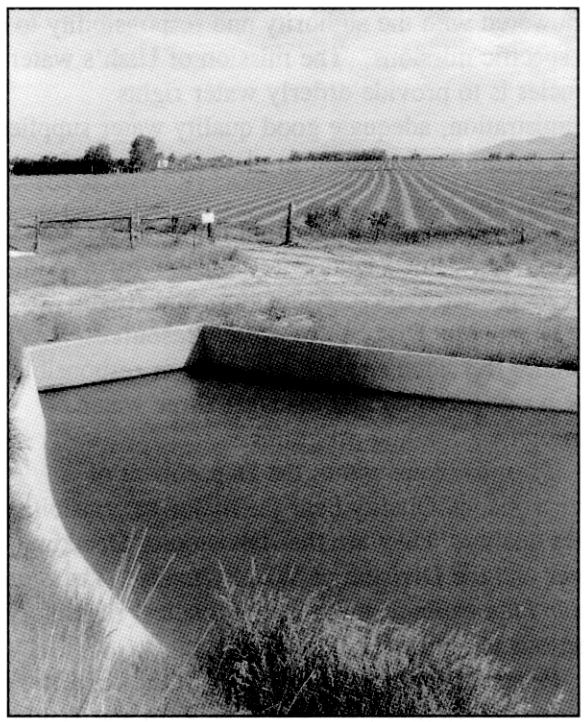
Drinking Water Regulations - The Drinking Water Board is responsible for assuring a safe water supply for domestic culinary uses. The board regulates any system defined as a public water supply. This may be publicly or privately owned. The Drinking Water Board has adopted State of Utah Public Drinking Water Regulations to help assure pure drinking water. The Drinking Water Board is empowered to adopt and enforced rules establishing standards prescribing maximum contaminant levels in public water systems. This authority is given by Title 26, Chapter 12, Section 5 of the *Utah Code Annotated, 1953*. The rules and regulations setting drinking water standards were adopted after public hearings. These standards govern bacteriologic quality, inorganic chemical quality, radiologic quality, organic quality and turbidity. Standards are also set for monitoring frequency and procedures.

The Drinking Water Board, through the Division of Drinking Water, also operates under the federal Safe Drinking Water Act. This act sets federal drinking water standards and regulations. The recently amended bill includes a revolving loan program to provide money to states to construct drinking water treatment plants. It also relaxes some Environmental Protection Agency requirements for setting standards for drinking water and provides more flexibility for small and rural systems.

The Division of Drinking Water serves as staff for the Drinking Water Board to assure compliance with standards. At the local level, considerable reliance is placed on public water supply operators. Those operating systems serving more than 800 people are currently required to have state certification. Water systems serving fewer than 800 people will only need a certified operator if the system has a treatment facility in place. The water systems are listed in Table 11-1. The Division of Drinking Water also administers the Drinking Water Source Protection Program. This program is designed to protect groundwater quality. Owners of wells and springs are required to develop protection programs based on the areas of influence around the source. The outcome of the program is to develop controls for potential sources of pollution to the groundwater. The Drinking Water Source Protection Program includes monitoring drinking water quality and source protection.

7.2.2 Agencies and Organizations

In the mid-19th century, the Church of Jesus Christ



Irrigated farmland in Lehi

of Latter-day Saints (Mormons) and local communities sponsored water development in Utah. In the early 20th century, with enactment of the federal reclamation law, the Bureau of Reclamation, the Soil Conservation Service (now Natural Resources Conservation Service), Corps of Engineers, Geological Survey, Environmental Protection Agency, and the U.S. Fish and Wildlife Service have all come to play major roles. Their roles

have been to provide regulatory and financial assistance to water users through state and local organizations. The organizations formed by specific enabling state legislation are:

Water Conservancy Districts - The District Court establishes these districts in response to a formal petition. A board of directors, appointed by the county commission, governs when the district consists of a single county. The governor appoints directors for multicounty districts.

Conservancy districts have very broad powers. They include constructing and operating water systems, levying taxes and contracting with government entities. Districts include incorporated and unincorporated areas. Those in this basin are the Central Utah, North Utah County, East Juab and Charleston water conservancy districts. The Salt Lake County Water Conservancy District extended its boundaries into Utah County in the 1970s and serves Camp Williams and the Jordan Narrows area.

Metropolitan Water Districts - These are similar to water conservancy districts, but they can encompass only incorporated areas. American Fork, Lehi, Lindon, Orem, Pleasant Grove/Lindon and Provo all have metropolitan water districts in Utah County.

Special Service Districts - The basin has 17 special service districts. These districts have many of the same duties and authorities of other districts and can be created by either counties or municipalities. They can be established to provide water, sewer, drainage, flood control, and non-water-related service.

Water Improvement Districts - This organization was established to accomplish water development, financing and management similar to the districts described above. Their activities are confined to unincorporated areas within a single county.

Drainage District - These districts deal with problems created by a high water table in areas where natural drainage conditions inhibit farming or other operations. Four drainage districts are located in southern Utah County and are known as the Benjamin Drainage District, the Lake Shore and Benjamin Drainage District, the Utah Westfield Drainage District and the Spring Creek Drainage District.

City Water Departments - Municipalities establish these to provide water service to residents.

Mutual Irrigation Companies - These companies are responsible for most early water development. They are formed under the corporation code, and the majority are nonprofit. Stockholders have the right to a quantity of water proportional to the number of shares they hold. Stockholders pay expenses of their company's operations according to the number of shares they each own.

Private Water Companies - Organized as corporations, these companies intend to earn a profit. Regulated by the Public Service Commission, they must provide service on request rather than only to shareholders.

Utah County has more than 110 water organizations, including mutual and private water companies and water users associations. Juab County has 20 water organizations, but not all are in the basin. Wasatch County has 41 and Summit County has two water organizations in the basin. A more complete list of special service districts can be found in the *Directory of Local Government Officials* which is published annually by the Utah League of Cities and Towns.

7.3 Problems and Needs

Major projects such as transportation causeways and residential and commercial developments on and around Utah Lake are hampered primarily by man's inability to control its surface elevation. Floods occurring in 1983-86 caused serious concern about the lake's potential for destroying property values. Some longtime residents believe control of the lake's surface elevation is a prerequisite for any serious development projects.

Reservoirs in the Utah Lake Basin attract large crowds of flat-water recreationists i.e., boaters, water skiers and campers. Pollution of the drinking water flowing from these reservoirs is an increasing problem. Overcrowding and associated safety issues, especially at Deer Creek Reservoir, are also concerns. See sections 12 and 15 for additional details.

The listing of the June sucker as endangered under the Endangered Species Act (ESA) of 1973, as amended, has increased the amount of federal regulatory responsibilities in the Utah Lake Basin. Any project that could affect critical habitat of the June sucker must be evaluated under Section 9 and 10 of the ESA and Section 7 if federal funds are involved. This causes project proponents to prepare a more thorough analysis of the effects their projects will have. Because the June sucker is endangered, a recovery plan has been developed to address problems that threaten its continued existence. The June Sucker Recovery Team has worked cooperatively with all interested parties in the overall management of Utah Lake. Many actions,

such as improving water quality, are consistent with current and future Utah Lake uses.

Ownership of land around Utah Lake is a significant problem. When the U.S. Supreme Court awarded the State of Utah ownership of the lake bottom in 1989, it became necessary to decide where the boundary lies. They are working on this problem, but it may take years to resolve. See Section 10 for additional discussion.

Drains designed to take irrigation return flows in south Utah County to Utah Lake frequently fail to function properly. This creates a high water table which lowers, and sometimes eliminates, crop yields. The problem could be increased when the Spanish Fork Canyon/Nephi Irrigation System is fully operational, delivering more water to the Utah Lake Basin.

7.4 Water Rights Regulation

Since 1903, the only manner in which one can obtain the right to use water is by filing an application with and securing approval from the State Engineer, or purchasing existing rights. In part, the State Engineer bases this approval upon there being unappropriated water that can be put to beneficial use without impairing existing rights. When the State Engineer approves an application, the applicant has a specific time to divert the water and put it to beneficial use. For good cause, this time may be extended. The applicant does the work and submits proof of appropriation. Then the State Engineer issues a certificate of appropriation as evidence of a perfected water right.

An owner of a perfected water right may lose the right if beneficial use ceases for longer than five years. The owner may file for, and be granted, an extension of time to resume use to protect a right that is not being used. A provision in the state constitution (Article XI, Section 6) prohibits municipalities from selling or otherwise disposing of any water rights they hold. An exception is if they trade for other water rights of equal value.

7.5 Water Quality Control

The Utah Water Quality Act (UWQA) regulates discharge of pollutants. The Utah Water Quality Board carries out the regulations, policies and continuous planning to prevent, control and abate water pollution. Surface water and groundwater are covered. The Division of Water Quality, Department of Environmental Quality, provides staff to carry out this work.

The Utah Water Quality Board (UWQB) developed and carries out the Utah Water Quality Rules under authority of *Utah Code Annotated*, 26-11-1 through 20. They are described in Section 7 of the *State Water Plan*.

Water quality certification by the state is covered under Section 401 of the federal Water Pollution Control Act, 1977. This act requires state certification on any application for a federal license or permit resulting in discharge into waters and/or wetlands of the United States. These activities include, but are not limited to, the construction or operation of the discharging facilities. Any discharges will comply with applicable state water quality standards and the applicable provisions of the Clean Water Act(CWA). In addition, the UWQB adopted and enforces *Ground Water Protection Regulations*. These regulations are building blocks in a formal program to protect beneficial uses of groundwater in Utah.

Three main regulatory concepts are provided. They are: (1) Prohibit the reduction of groundwater quality, (2) prevent groundwater contamination rather than clean up after the fact, and (3) provide protection based on the differences in existing groundwater quality. There are five significant components: (1) Groundwater quality standards, (2) groundwater classification, (3) groundwater protection levels, (4) aquifer classification procedures, and (5) a groundwater discharge permit system. Statutory authority for the regulations is contained in Chapter 19-5 of the *Utah Code Annotated*.

The *Ground Water Protection Regulations* contain a groundwater discharge permitting system which will control activities that may affect groundwater quality. A groundwater discharge permit will be required if, under normal circumstances, there may be a release to groundwater. Owners of existing facilities will not be obligated to apply for a groundwater discharge permit immediately. An existing facility is a facility or activity that was in operation or under construction before February 10, 1990. Owners of these facilities would have to notify the executive secretary of the UWQB about the nature and location of their discharge.

These regulations provide for a permit by rule for certain facilities or activities. Many operations pose little or no threat to groundwater quality. Some are already adequately regulated by other agencies. These are automatically given a permit and need not go through the formal permitting requirements. Therefore, facilities qualifying under provisions of Section R448-6-6.2 will administratively be extended a groundwater discharge permit (permit by rule). However, these

operations are not exempt from the applicable TDS limits or groundwater quality standards.

The authority for 401 Water Quality Certification is carried out by the Division of Water Quality. Whether administering a CWA program directly or delegating it to a state, the Environmental Protection Agency retains the oversight role to insure compliance with all rules, regulations and policies.

Local communities are encouraged to set up and carry out a *Local Aquifer Protection Management Plan*. If so, they can contact the Division of Water Quality for information. Provo and Springville have adopted watershed ordinances to protect their water supplies.

7.6 Drinking Water Regulation

The Drinking Water Board is empowered to adopt and enforce rules establishing standards prescribing maximum contaminant levels in public water systems. This authority is given by Title 26, Chapter 12, Section 5 of the *Utah Code Annotated, 1953*. These standards govern bacteriologic, inorganic chemical, radiologic and organic chemical quality, and turbidity. Standards are also set for monitoring frequency and procedures.

7.7 Environmental Considerations

Water is often viewed as a commodity for people's use with little thought to other purposes of the hydrologic cycle. Adequate quantity and quality of water are crucial to maintaining healthy wildlife habitats and populations. This includes providing instream flows where prudent and possible, and maintaining critical wetland areas.

Providing instream flow as a beneficial use to maintain fish and wildlife populations, riparian vegetation, and stream channels is widely recognized as important. The Utah Legislature recognized this through recent legislation allowing the Division of Wildlife Resources or Division of Parks and Recreation to file an application for permanent or temporary changes for providing water for instream flows. Adequate water resources planning considers instream flow needs early in project design to resolve problems before construction or operation of the project.

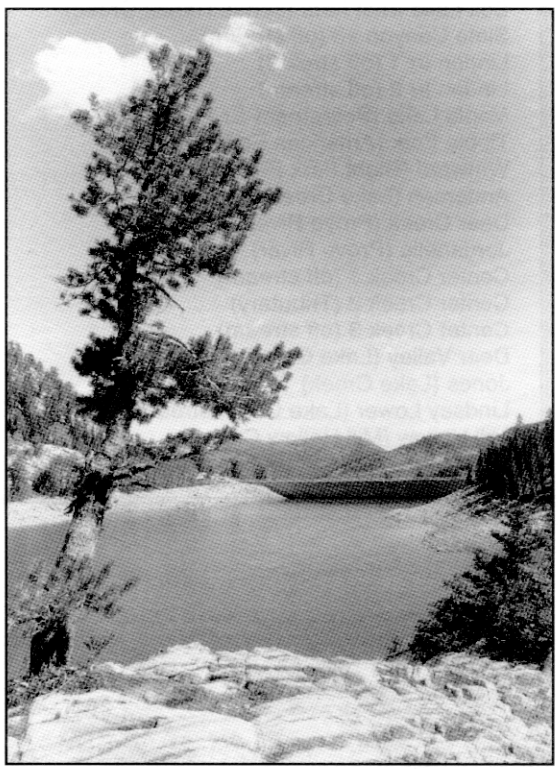
Wetlands are extremely important for groundwater recharge and discharge, flood storage, shoreline stabilization, sediment trapping, water purification and pollution control, food chain support, habitat for fish and wildlife, and active and passive recreation. Stream channelization and draining and filling of wet areas can all impact wetlands.

Many potential sources of pollution may adversely affect the quality of groundwater. These sources include agriculture, on-site waste treatment systems, solid wastes, hazardous wastes, oil and gas exploration and production, mining, surface impoundments, and urban runoff. The importance of groundwater as a resource should always be considered. Development activities should emphasize protection of recharge areas of the major aquifers and management of supplies to prevent degradation.

The Utah Lake Basin has several environmentally sensitive areas. These areas are shown and discussed in the *Resource Management Plans* prepared by the Bureau of Land Management. These should be considered for protection and/or mitigation when water development is contemplated.

The basin also has some of the state's best remaining agricultural land. Open space is becoming a public environmental concern, valued more by everyone as it becomes more scarce. A loss of open space correlates with the loss of agricultural land. A perceived correlation exists between these losses and increases in traffic congestion, water shortages, power outages and other infrastructure inadequacies.

SB 48, The Land and Water Conservation Commission Act passed by the 1996 Legislature provides assistance for open space planning to local



Dam safety work is finished at Twin Lakes

governments. The Utah Reclamation Mitigation and Conservation Commission have identified several environmental enhancement projects associated with Provo River, Diamond Fork River and Utah Lake. Water regulators and institutions could explore opportunities to support the objectives of this law.

7.8 Dam Safety

All dams that store over 20 acre-feet of water, and where failure may cause loss of life or significant property damage, are assigned a hazard rating. Hazard ratings measuring the potential effects of failure are either high, moderate or low. This determines the frequency of inspection. High-hazard dams are inspected yearly; moderate, every other year; and low, every fifth year. Following the inspection, a letter from the State Engineer suggests maintenance needs and requests specific repairs. He may declare the dam unsafe and order it breached or drained. Efforts are always made to work with dam owners to schedule necessary actions. The State Engineer has outlined design standards in a publication entitled *Rules and Regulations Governing Dam Safety in Utah*. Plans and specifications must be consistent with these standards. Dam safety personnel monitor dam construction to insure compliance with plans, specifications and design reports. Any problems are resolved before final approval. The State Engineer is currently assessing the ability of all high hazard dams to pass the Probable Maximum Precipitation (PMP) flood. The assessment also includes the ability of the dam to withstand earthquakes. Table 7-1 shows the reservoir dams classified as high hazard in the Utah Lake Basin. The Division of Water Rights rates federal dams, but they are exempt from requirements of the State Dam Safety Program. The Bureau of Reclamation inspects dams constructed under its programs. ✣ ✣

Table 7-1
HIGH HAZARD DAMS

Dam Name and (Stream)	County	Height (feet)	Capacity (acre-feet)
Mona (Currant Cr.)	Juab	33	19,190
No. Utah County (Battle Creek)	Utah	47	44
Big East (Wimmer Cr.)	Utah	29	670
Box Lake East Fork (Jones Ranch Creek)	Utah	28	160
Slate Canyon #3 (off stream)	Utah	18	15
Lindon Irr 1 (off stream)	Utah	24	10
Lindon Irr 2 (off stream)	Utah	23	18
Maple Lake (Peteetneet Cr.)	Utah	25	130
Tibble Fork (American Fork River)	Utah	44	166
Winward (Right Fork Peteetneet Creek)	Utah	37	73
Anderson (Lake Creek offstream)	Wasatch	30	132
Deer Creek (Provo River)	Wasatch	235	152,560
Jordanelle (Provo River)	Wasatch	300	314,000
Center Creek 1 (off stream)	Wasatch	38	400
Center Creek 2 (Tributary)	Wasatch	38	150
Center Creek 3 (off stream)	Wasatch	33	86
Deer Valley (Lake Creek)	Wasatch	26	138
Jones (Lake Creek)	Wasatch	36	176
Lindsey Lower (Lake Cr. Offstream)	Wasatch	32	179
Mill Hollow (Mill Hollow Cr.)	Wasatch	36	176
Witt Lake	Wasatch	44	1,226